Safety Progression and Technology Advancement in Last Fifty Years

A brief overview of major changes occurring in wildland fire suppression after the Mann Gulch fire of 1949:

1950-1959

The Aerial Fire Depot in Missoula, Montana, was dedicated in 1954. The facility included the world's largest combustion chamber dedicated to wildland fire research.

Thirty fire agencies participated in aerial bombing use research at Camp Pendleton in 1954.

As a result of 16 tragedy fires from 1936 to 1956 in which 79 men lost their lives, the United States Department of Agriculture's Forest Service published in 1957 the *Report of Fire Task Force* to recommend actions to reduce the chances of men being killed by burning while fighting fire.

Immediate action recommended:

1. Adherence to "Principles of Organization"
2. Crew Boss Training in Blow-up Conditions
3. Standard Fire Fighting Orders
4. Communication on Campaign Fires

Longer term actions:

1. Standardization of Practices
2. Fire Control Training
3. Fire Research
4. Other Items Needing Special Attention, such us Fire Weather Forecasting, Career Development, Pre-planning for Fire Suppression, Safety Gear Development, and Near Miss documentation for future training purposes

1960-1969

In 1960, the Forest Service constructed the Fire Sciences Laboratory facility in Missoula, Montana, dedicated to wildland fire research.

Downhill line construction checklist was developed after fatalities on Loop and Canyon fires.

1970-1979

After the Romero Fire in 1971, the *Radio Cache Standards* and *Red Card Qualification System* were introduced.

A national fire research, development, and applications program was established by the Forest Service in 1973.

Battlement Creek fire of 1976 brought *Common Denominators* and mandated carrying fire shelters.

1980-1989
During this period, techniques for assessing fuels, and models for predicting fire behavior were developed and adopted for use by wildland fire managers throughout the United States

After "The Siege of ’87," *Wildland-Urban Watchouts* were developed.

On the heels of the historic 1988 Yellowstone fires, researchers developed the first computer generated, three-dimensional fire behavior models overlaid on topographical maps.

By the late 1980s, extensive studies were under way on the use of infrared aircraft scanners for fire discovery and mapping.

1990-1999
Dude fire in 1990 brought *LCES* and guidelines for *Transfer of Command from Initial Attack to Extended Attack.*

Around 1993 Fire Science Laboratory researchers developed infrared aerial scanning to detect and photograph forest fires at night or through heavy smoke.

Standards for Fire and Aviation Operations, also known as "Red Book," was a direct result of 1994’s South Canyon fire where 14 firefighters were killed.

2000-
Thirty Mile fire in 2001, with four fatalities, and Cramer Fire in 2003, with two fatalities, resulted in additional Forest Service policies through the *Thirty Mile Fire Abatement Plan* and *Cramer Fire Accident Prevention Plan.*